

Meiosis

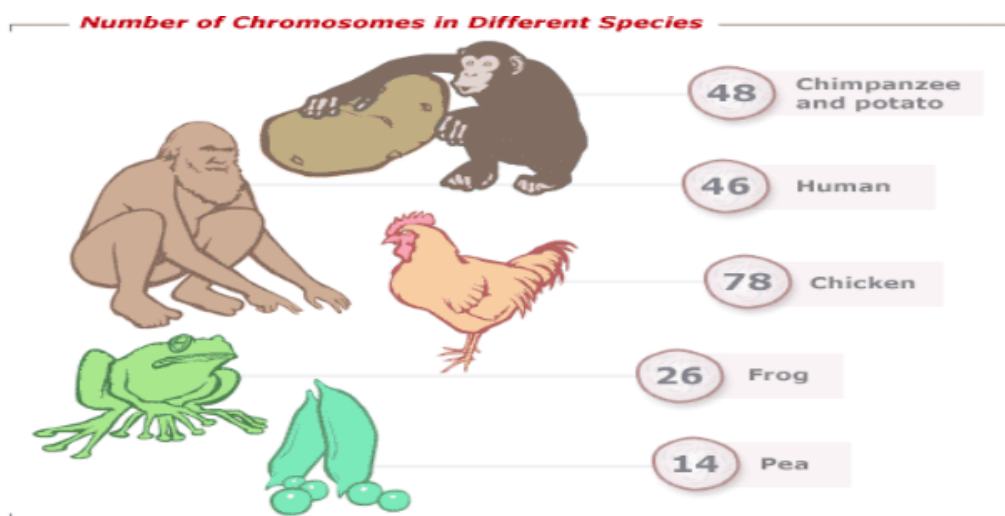
<https://www.youtube.com/watch?v=16enC385R0w>

process by which the number of chromosomes are reduced in half

- occurs in the production of sex cells (gametes)

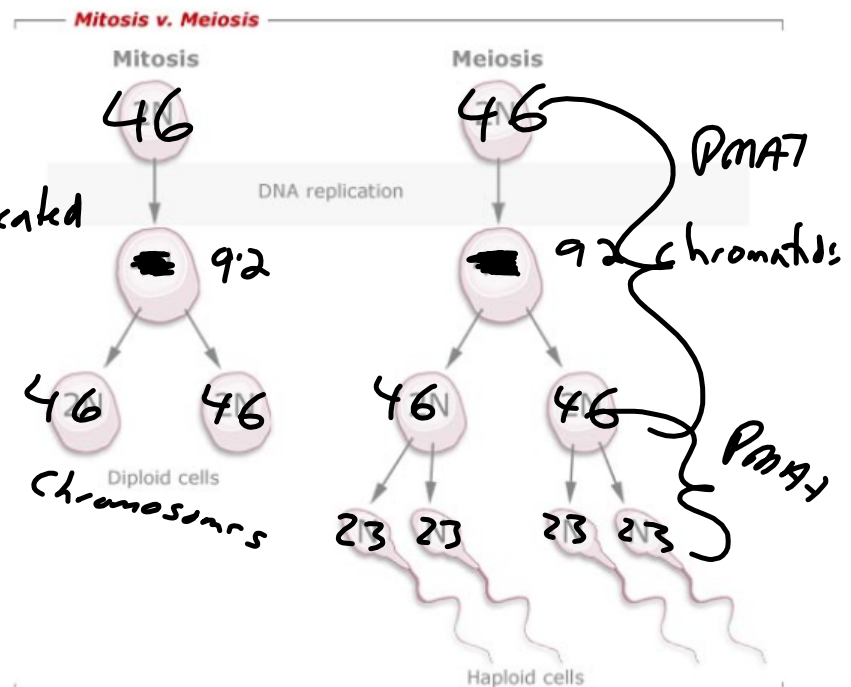
- for humans, chromosomes must be reduced from 46 (2N or diploid number) to 23 (N or haploid number)

Somatic
cells



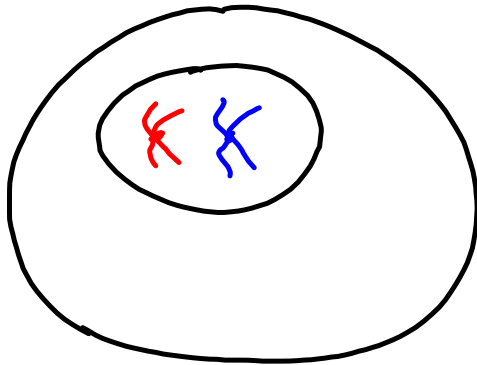
The process of creating a gamete (sex cell) is called MEIOSIS

It is similar to mitosis, but will produce 4 daughter cells that are each haploid.



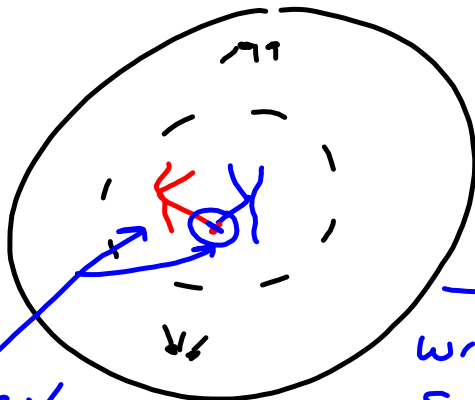
Meiosis

1. Before entering Meiosis the cell must duplicate its genetic material during S phase



→ this cell will enter Prophase 1

- chromatin turned into chromosomes
- nuclear membrane is breaking down



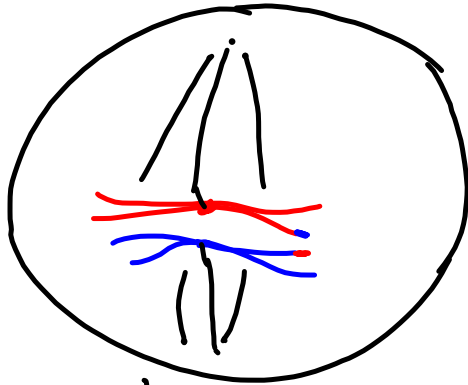
- Centrioles appear
- spindle fibres appear

→ the moving together & wrapping around is called Synapsis

- the grouping of 4 chromatids together is called a tetrad

- the switching of genetic material is called crossing over and is the main reason diversity, differences in DNA occur.

Metaphase 1

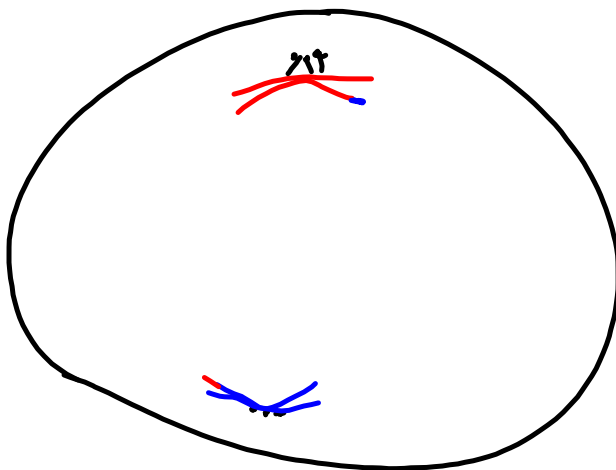


- homologous chromosomes line up across the equator
- Spindle fibers attach

* Independent Assortment

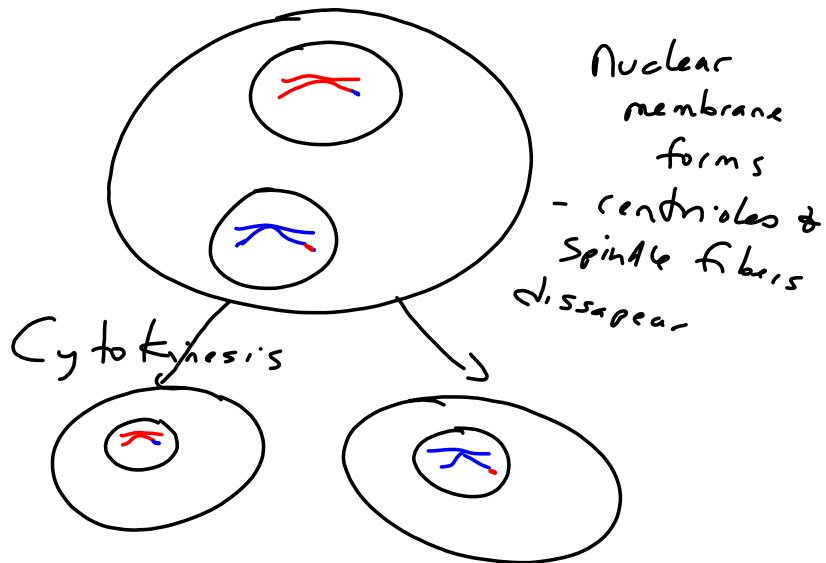
- When the homologous chromosomes line up across the equator, they do so randomly. ∴ any chromosome can end up in any cell

Anaphase 1



- Pairs of homologous chromosomes separate & are pulled to the poles by the spindle fibers.

Telophase I



Prophase II



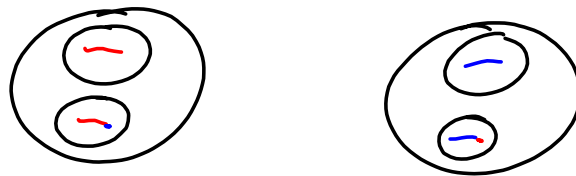
Metaphase II (2)



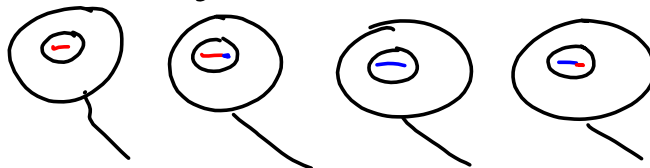
Anaphase II



Telophase II



Cytokinesis



* only 1 egg will be fully developed in the process, the other 3 will degenerate.